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## Gingivitis

*Gingivitis is inflammation of the gingiva, producing bleeding with swelling, redness, exudate, a change of normal contours, and, occasionally, discomfort. Diagnosis is based on inspection. Treatment involves professional teeth cleaning and intensified home dental hygiene. Advanced cases may require antibiotics or surgery.*

Normally, the gingiva are firm, tightly adapted to the teeth, and contoured to a point. Keratinized gingiva near the crowns is pink stippled tissue. It should fill the entire space between the crowns. The gingiva farther from the crowns, called alveolar mucosa, is nonkeratinized, highly vascular, red, movable, and continuous with the buccal mucosa. A tongue depressor should express no blood or pus from normal gingiva.

Inflammation, or gingivitis, the most common gingival problem, may evolve into periodontitis.

### Etiology

The most common cause of gingivitis is poor oral hygiene. Poor oral hygiene allows plaque to accumulate between the gingiva and the teeth (gingivitis does not occur in edentulous areas). Irritation from plaque deepens the normal crevice between the tooth and gingiva, creating gingival pockets. These pockets contain bacteria that may cause both gingivitis and (root) caries. Other local factors, such as malocclusion, dental calculus, food impaction, faulty dental restorations, and xerostomia, play a secondary role.

Gingivitis also commonly occurs at puberty, during menstruation and pregnancy, and at menopause, presumably because of hormonal changes. Similarly, oral contraceptives may exacerbate inflammation.

Gingivitis may be an early sign of a systemic disorder, particularly those that affect the response to infection (eg, diabetes, AIDS, vitamin deficiency, leukopenia), particularly if it occurs in patients with minimal dental plaque. Some patients with Crohn's disease have a cobblestone area of granulomatous gingival hypertrophy when intestinal flare-ups occur. Exposure to heavy metals (eg, lead, bismuth) may cause gingivitis and a dark line at the gingival margin. Severe deficiency of [niacin](#) or vitamin C can cause gingivitis.

### Symptoms and Signs

Simple gingivitis first causes a deepening of the sulcus (gingival crevice) between the tooth and the gingiva, followed by a band of red, inflamed gingiva along one or more teeth, with swelling of the interdental papillae and easy bleeding. Pain is usually absent. It may resolve, remain superficial for years, or occasionally progress to periodontitis.

Pericoronitis is acute, painful inflammation of the gingival flap over a partly erupted tooth, usually around mandibular 3rd molars (wisdom teeth). Infection is common, and an abscess may develop. Pericoronitis often recurs as food gets trapped beneath the flap. The gingival flap disappears when the tooth is fully erupted.

Desquamative gingivitis may occur during menopause. It is characterized by deep red, painful gingival tissue that bleeds easily. Vesicles may precede desquamation. The gingiva is soft because the keratinized cells that resist abrasion by food particles are absent. A

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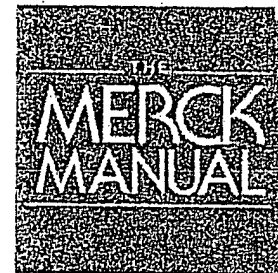
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similar gingival lesion may be associated with pemphigus vulgaris, bullous pemphigoid, benign mucous membrane pemphigoid, or atrophic lichen planus.

During pregnancy, swelling, especially of the interdental papillae, is likely to occur. Pedunculated gingival growths often arise in the interdental papillae during the 1st trimester, may persist throughout pregnancy, and may or may not subside after delivery. Pregnancy tumors are soft reddish masses that are, histologically, pyogenic granulomas. They develop rapidly and then remain static. An underlying irritant is common, such as calculus or a restoration with a rough margin.

Uncontrolled diabetes can exaggerate the effects of gingival irritants, making secondary infections and acute gingival abscesses common.

In leukemia, the gingiva may become engorged with a leukemic infiltrate, exhibiting clinical symptoms of edema, pain, and easily induced bleeding.

In scurvy (vitamin C deficiency), the gingiva are inflamed, hyperplastic, and engorged, bleeding easily. Petechiae and ecchymoses may appear throughout the mouth.

In pellagra (niacin deficiency), the gingiva are inflamed, bleed easily, and are susceptible to secondary infection. Additionally, the lips are reddened and cracked, the mouth feels scalded, the tongue is smooth and bright red, and the tongue and mucosa may have ulcerations.

### Diagnosis and Treatment

Finding erythematous, friable tissue at the gum lines confirms the diagnosis. To detect early gingival disease, some dentists frequently measure the depth of the pocket around each tooth. Depths < 3 mm are normal; deeper pockets are at high risk of gingivitis and periodontitis.

Simple gingivitis is controlled by proper oral hygiene with or without an antibacterial mouth rinse. Thorough scaling (professional scraping with a sharp instrument) should be performed. If appropriate, poorly contoured restorations are reshaped or replaced and local irritants removed. Excess gingiva, if present, can be excised. Drugs causing gingival hyperplasia should be stopped if possible. Pregnancy tumors are excised.

 Gingivitis



Treatment of pericoronitis consists of removal of debris from under the gingival flap; irrigation with saline, 1.5% hydrogen peroxide, or 0.12% chlorhexidine; and, particularly when episodes recur, extraction. If severe infection develops, antibiotics may be given for a day before extraction and continued during healing. A common regimen is penicillin VK 500 mg po q 6 h for 10 days (or until 3 days after all inflammation has subsided). Abscesses associated with pericoronitis require localized incision and drainage, a periodontal flap and root debridement, or extraction.

In gingivitis from systemic disorders, treatment is directed at the underlying cause. In desquamative gingivitis during menopause, sequential administration of estrogens and progestins may be beneficial, but adverse effects of this therapy (see Menopause: Hormone therapy) limit recommendations for its use. Gingivitis from pemphigus vulgaris (see Bullous Diseases: Pemphigus Vulgaris) and similar mucocutaneous conditions may require systemic corticosteroid therapy.

### Prevention

Daily removal of plaque with dental floss and a toothbrush and routine cleaning by a dentist or hygienist at 6-mo to 1-yr intervals can help prevent gingivitis. Patients with systemic disorders predisposing to gingivitis require more frequent professional cleanings (from q 2 wk to 4 times/yr).

### ACUTE NECROTIZING ULCERATIVE GINGIVITIS (ANUG)

(Fusospirochetosis; Trench Mouth; Vincent's Infection or Angina)

*Acute necrotizing ulcerative gingivitis is a painful infection of the gums. Symptoms are acute pain, bleeding, and foul breath. Diagnosis is based on clinical findings. Treatment is gentle*

*debridement, oral hygiene, mouth rinses, supportive care, and, if debridement must be delayed, antibiotics.*

Acute necrotizing ulcerative gingivitis occurs most frequently in smokers and debilitated patients who are under stress. Other risk factors are poor oral hygiene, nutritional deficiencies, and sleep deprivation.

### Symptoms, Signs, and Diagnosis

The usually abrupt onset may be accompanied by malaise or fever. The chief manifestations are acutely painful, bleeding gingiva; excessive salivation; and overwhelming foul breath (fedoris). Ulcerations, which are pathognomonic, are present on the dental papillae and marginal gingiva; these have a characteristically punched-out appearance and are covered by a gray pseudomembrane. Similar lesions on the buccal mucosa and tonsils are rare. Swallowing and talking may be painful. Regional lymphadenopathy often is present.

Rarely, tonsillary or pharyngeal tissues are affected, and diphtheria or infection due to agranulocytosis must be ruled out.

### Treatment

Treatment consists of gentle debridement with a hand scaler or ultrasonic device. Debridement is performed over several days. The patient uses a soft toothbrush to wipe the teeth. Rinses at hourly intervals with warm normal saline or twice/day with 1.5% hydrogen peroxide or 0.12% chlorhexidine may help during the first few days after initial debridement. Essential supportive measures include improved oral hygiene (performed gently at first), adequate nutrition, high fluid intake, rest, analgesics as needed, and avoiding irritation (eg, from smoking or from hot or spicy foods). Marked improvement usually occurs within 24 to 48 h, after which debridement can be completed. If debridement is delayed (eg, if a dentist or the instruments necessary for debridement are unavailable), oral antibiotics (eg, penicillin VK 500 mg, erythromycin 250 mg, or tetracycline 250 mg q 6 h) provide rapid relief and can be continued until 72 h after symptoms resolve. If the gingival contour inverts (ie, if the tips of papillae are lost) during the acute phase, surgery is eventually required to prevent subsequent periodontitis.

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